

**Remarks**

As stated above, the applicants appreciate the Examiner's thorough examination of the subject application and consider the claims of the subject application in condition for allowance in view of the preceding amendments and following remarks.

The applicants also appreciate the Examiner for granting and attending an interview on 8 April 2005 with Mr. Mark Lappin, an attorney of record for the subject application. Based on an agreement made during the interview, the applicants have amended independent claims 1, 15, 23 and 28 to include subject matter of claim 4 to more clearly describe the applicants' invention. No new matter has been added by these amendments. Additionally claims 4 and 8 have been canceled.

Concerning Items 1-3 of the subject action, the Examiner rejects claims 1, 28, and 29 under 35 USC §102(e), as being anticipated by Syllaios et al. (U.S. Patent 6,297,511; hereinafter Syllaios).

Applicants claim (in amended independent claim 1):

A narrow band incoherent radiation emitter detector comprising: (A) a planar filament emission/detection element characterized by (B) a predetermined spectral range of emitted/detected radiation and (C) an emission/detection width of  $dl/l$  less than about 0.1, where  $l$  is the wavelength of said radiation, (D) wherein said emission/detection width is substantially determined by surface features of said emission/detection element.

Applicants respectfully assert that Syllaios fails at least to disclose or suggest elements (A), (C) and (D) of applicants' amended independent claim 1, namely "a planar filament emission/detection element characterized by an emission/detection width of  $dl/l$  less than about 0.1, in which  $l$  is the wavelength of said radiation, and the emission/detection width is substantially determined by surface features of the emission/detection element" (emphasis added).

In contrast, Syllaios discloses a quarter – wavelength cavity for producing infrared (IR) radiation. The cavity is formed by thin members disposed over a substrate; which defines a three-dimensional emitter structure, and not a planar emitter structure.

To more clearly clarify their invention, the applicants have amended independent claims 1, 15, 23 and 28. In particular, each independent claim has been amended such that the “emission/detection width is substantially determined by surface features of the emission/detection element” (emphasis added). By implementing various types of surface features, a narrow, controllable emission/detection width is produced in a planar geometry.

In contrast, Syllaios describes controlling IR emissions by adjusting the distance between two separate surfaces that define the cavity. In particular, Syllaios states:

*“The depth of cavity 50 between reflector 30 and membrane 20 may be sized to produce a desired frequency of IR radiation. For example, cavity 50 may be sized so that IR emitter 10 produces IR radiation at a frequency that can be detected by a corresponding IR detector (not explicitly shown). More specifically, cavity 50 can be sized to emit IR radiation in the mid-length infrared (MWIR) window, which is the 3 micron to 5 micron wavelength range, and the long wavelength infrared (LWIR) window, which is the 8 micron to 12 micron wavelength range.”* (Col. 3, lines 49 – 58) (emphasis added).

Thus, along with not implementing a planar structure to produce a narrow band incoherent radiation emitter detector, the three – dimensional size of the cavity is adjusted to control emissions and the reference does not suggest or disclose that the emission/detection width is substantially determined by surface features of the emission/detection element.

Accordingly, applicants respectfully assert that Syllaios is not a proper basis for a 35 USC §102(e) rejection, as the reference fails to disclose each and every element of the applicants’

independent claim 1. Therefore the applicants respectfully assert that independent claim 1 is patentable over the cited reference. Further, as independent claims 15, 23, and 28 each include “a planar filament emission/detection element” (emphasis added) and have been amended to include “a emission/detection width is substantially determined by surface features of the emission/detection element”, the applicants respectfully assert that amended independent claims 15, 23, and 28 are also patentable over Syllaios.

Concerning Items 4-6 of the subject action, the Examiner rejects claims 1-14 under 35 USC §103(a), based on the combination of the teachings of Laine (U.S. Patent 5,864,144; hereinafter Laine) in view of Syllaios. Further, the Examiner also rejects claims 15-27 under 35 USC §103(a), based on the combination of the teachings of Alexay (U.S. Patent 5,584,557; hereinafter Alexay) and Syllaios.

Similar to Syllaios, neither Laine or Alexay disclose or suggest a planar filament emission/detection element characterized by a resonant emission/detection width of  $d/l$  less than about 0.1, where  $l$  is the wavelength of said radiation, and where the emission/detection width is substantially determined by surface features of the emission/detection element (emphasis added).

Accordingly, applicants respectfully assert that both the combination of Laine and Syllaios and the combination of Alexay and Syllaios are not proper basis for a 35 USC §103(a) rejection, as either combination of the references fails to disclose each and every element of the applicants' claimed invention. Therefore the applicants respectfully assert that amended independent claims 1, 15, 23, and 28 are patentable over the combination of the cited references. Further, as dependent

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claims 2-14, 16 – 22, 24 – 27, and 29 respectively depend (either directly or indirectly) upon one of the amended independent claims 1, 15, 23, and 28, the applicants respectfully assert that all of the dependent claims are patentable over each reference individually or in combination.

The total number of claims remains the same. Therefore, no additional claim fee is required. An extension fee of \$510 pursuant to 37 CFR §1.136(a) for a reply within the third month is also enclosed. No new matter has been added by these amendments. The applicants respectfully assert that the subject application is now in condition for allowance. Please apply any charges or credits to deposit account 50-1133.

If the Examiner believes there are any outstanding issues to be resolved with respect to the above-identified application, the Examiner is invited to telephone the undersigned at their earliest convenience so that such issues may be resolved telephonically.

Respectfully submitted,

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